

# GROWING FERAL with CONTEXTUAL CRAFTING

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For my PhD, I created a "design framework" for field biologists. The idea was that digital technology offered new powers for scientists...

It's a robo woodpecker!

...but it also risked erasing valuable parts of their practice.

This vision software isn't working for our ants.

You need to use bigger ants!

You can't film the ants on trees!

Put them in a well-lit box in the lab!

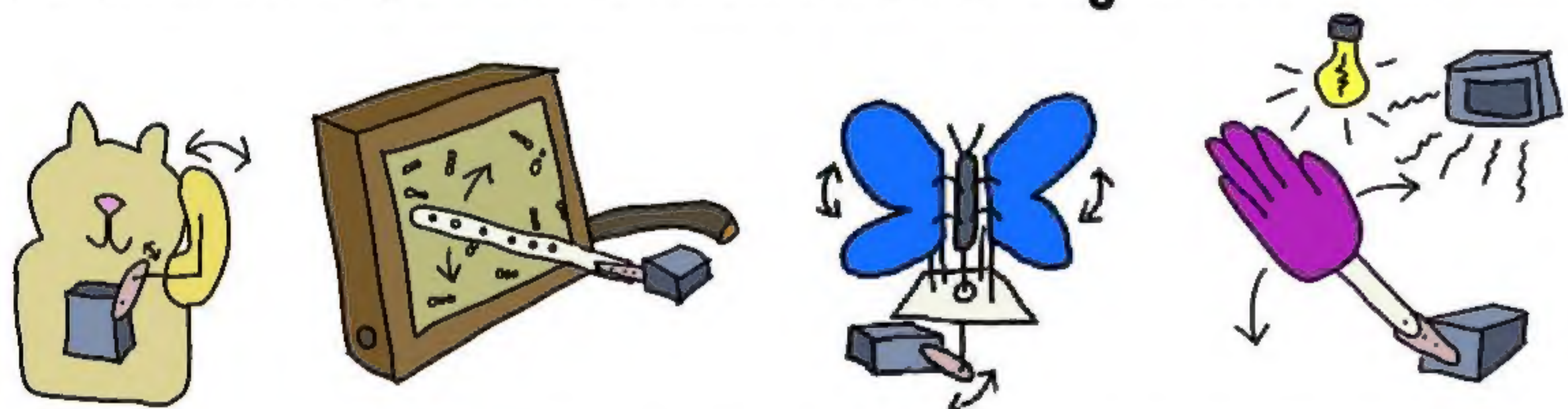
Moreover, it often took them away from time in the field and forced them to work in the lab.

So I went to Panamá to live and work with field biologists to find out how technology could be developed in a better way for them.

I developed four guidelines. The first two describe the tools' functions:

## OPEN-ENDEDNESS

This aspect encourages tools designed as flexible, generalizable toys. Simple actions and senses that can be built into specific devices in a variety of contexts.



Biologists redesigned "Lucky Cat" machines for multiple purposes like bee sleep regulation, reanimating butterfly corpses, and keeping lab lights on.

## IMMERSION

Immersion asks tools to share data, not as just numbers, but as sensory experiences. Such ambient sensations allow a naturalist's mind to create higher-level connections between their experiences.

Ant movement mapped to electrodes on leaf-mounted tongue display.

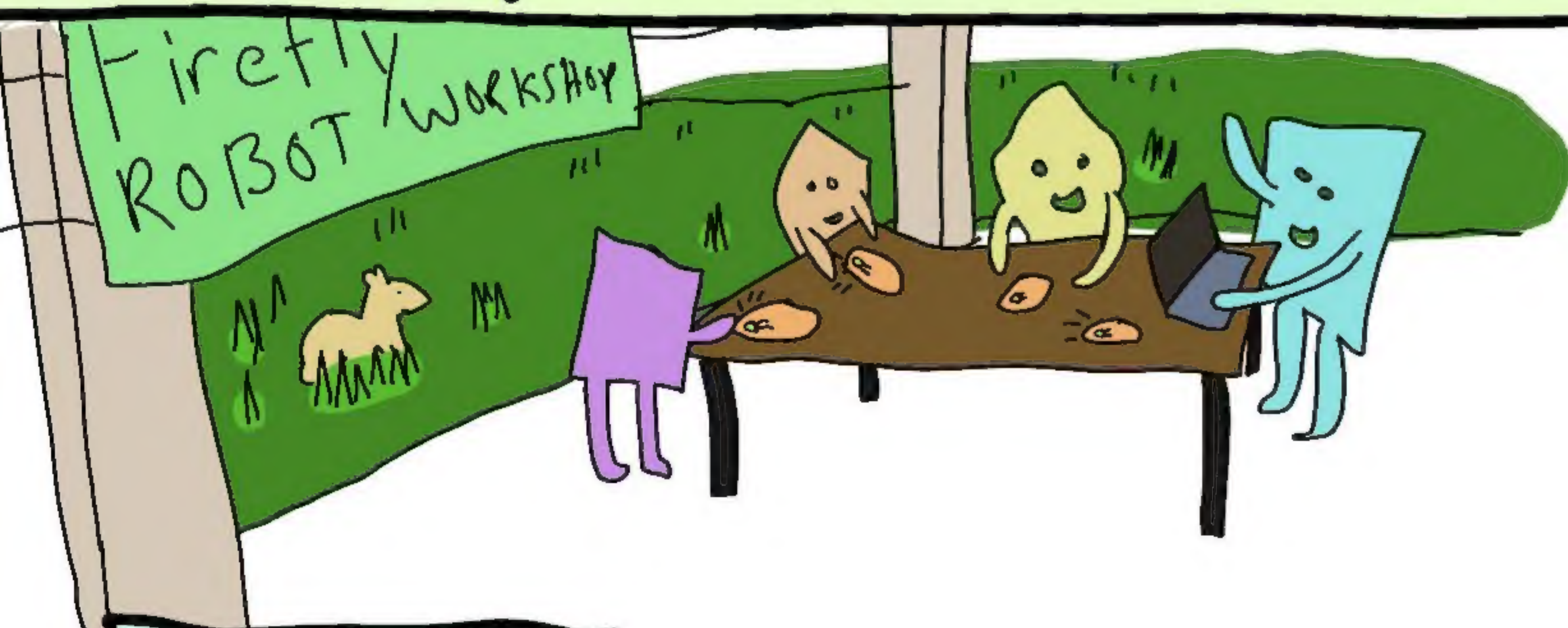
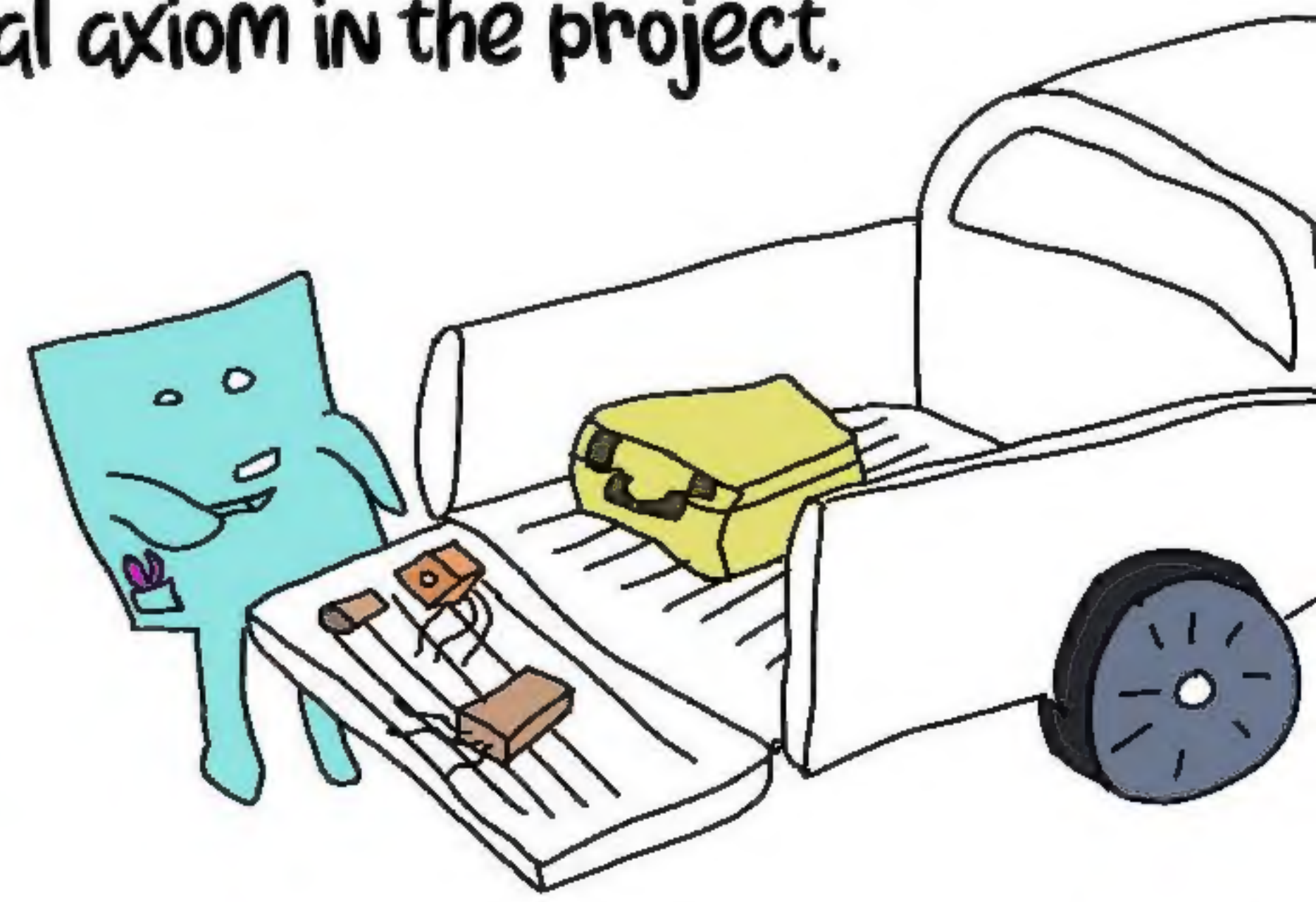
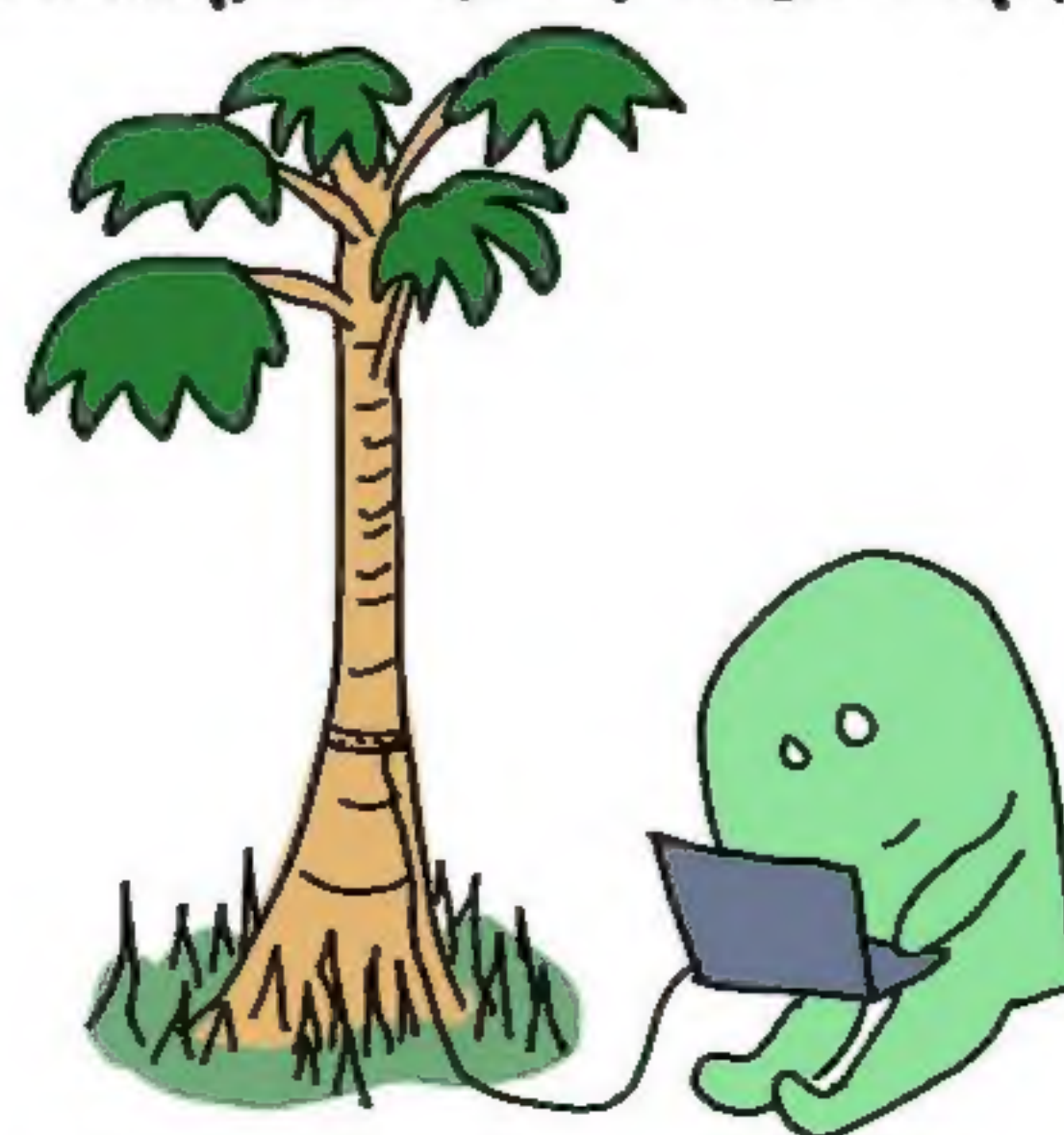
The second two guidelines discuss how tools are built:

## CONTEXTUAL CRAFTING

This guideline started with the idea that "tools built in the field can be fixed in the field." It's simple: people should just build tools where they will be used. However, it became the most radical axiom in the project.

## AGENCY

Science needs to be shared and repeatable, but black-boxed tools prevent that. Designers need to prioritize scientists' agency and understanding by building tools with them and openly sharing all designs.





# TOOLS CREATE YOUR WORLD

Ants can walk.

Your tools are extensions of your senses. They create our mental models of the world.

Just like your senses, tools also carry assumptions of the world based on the context in which they were developed.

Ants can fly!?

That means you can run into the problem of a:

## TAUTOLOGICAL TOOL CYCLE

...where a tool doesn't help explore, but rather reinforces the same ideas of the place where it was born.

Tool makes model of the world

One specific context hides assumptions in the tool

# YOUR WORLD SHAPES YOUR TOOLS

To break out of these cycles, we pushed the concept of contextual crafting deeper and deeper with projects like ...

## HIKING HACKS

The studio is the field expedition!

## WEARABLE STUDIOS

Your body is the studio!

## MOBILE LABS

The studio moves to the field!

Making is Exploring!



This attention, however, also increases the amount of people looking to derail these motivations from the original goal.

# BIOLOGY

The bad parts of things suddenly became more apparent. Developing one's own infrastructure can highlight the ineffectiveness or extractive qualities that much research takes as an unavoidable given.



Each of these new understandings presented a life choice.

Perhaps I was too idealistic, or stubborn, or naïve.

And each time these choices came about, I invariably chose the option to try to work deeper in context.

Regular conferences are short, inactive, resource intensive, and disconnected from local contexts.

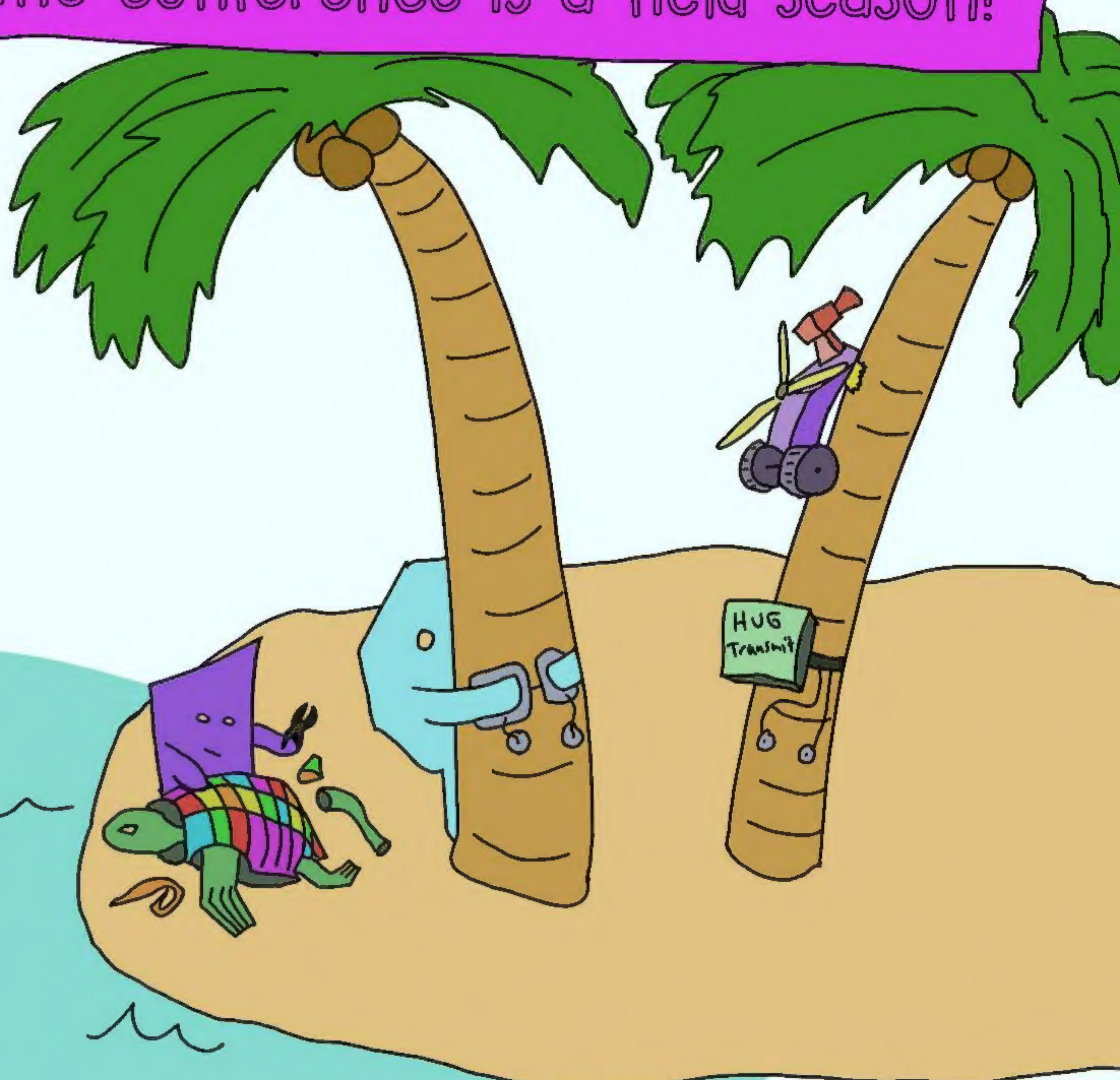
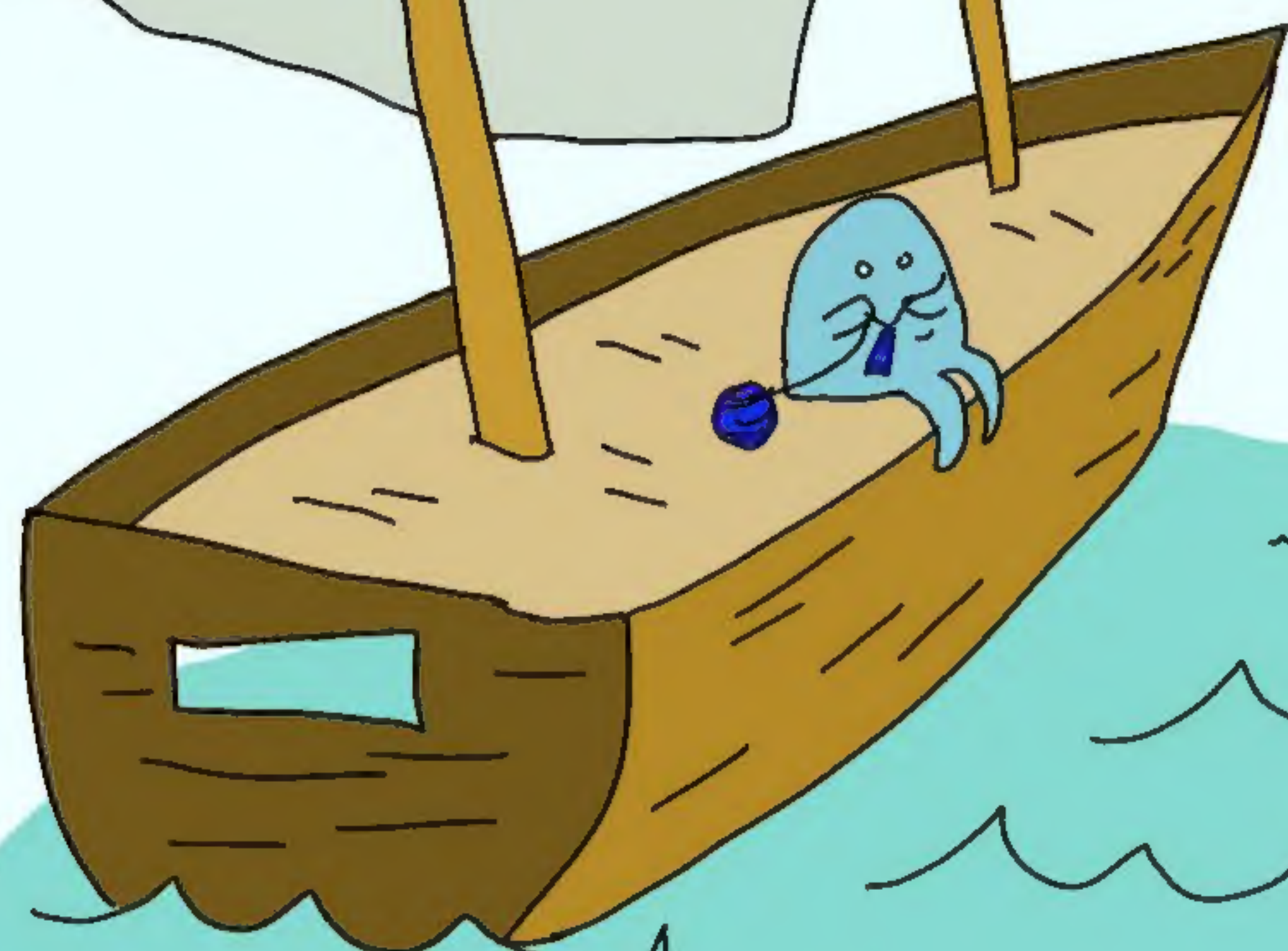
Learning from events like Pifcamp and SignalFire, we created an experimental 4-6 week unconference based on interacting with nature, sharing work, testing ideas together, and developing infrastructure with local partners.

I liked to think I had just fallen too far in love with the nature I had come to know,

but other times I just felt foolish for thinking deeper answers might lie somewhere in the forest.

## DINACON

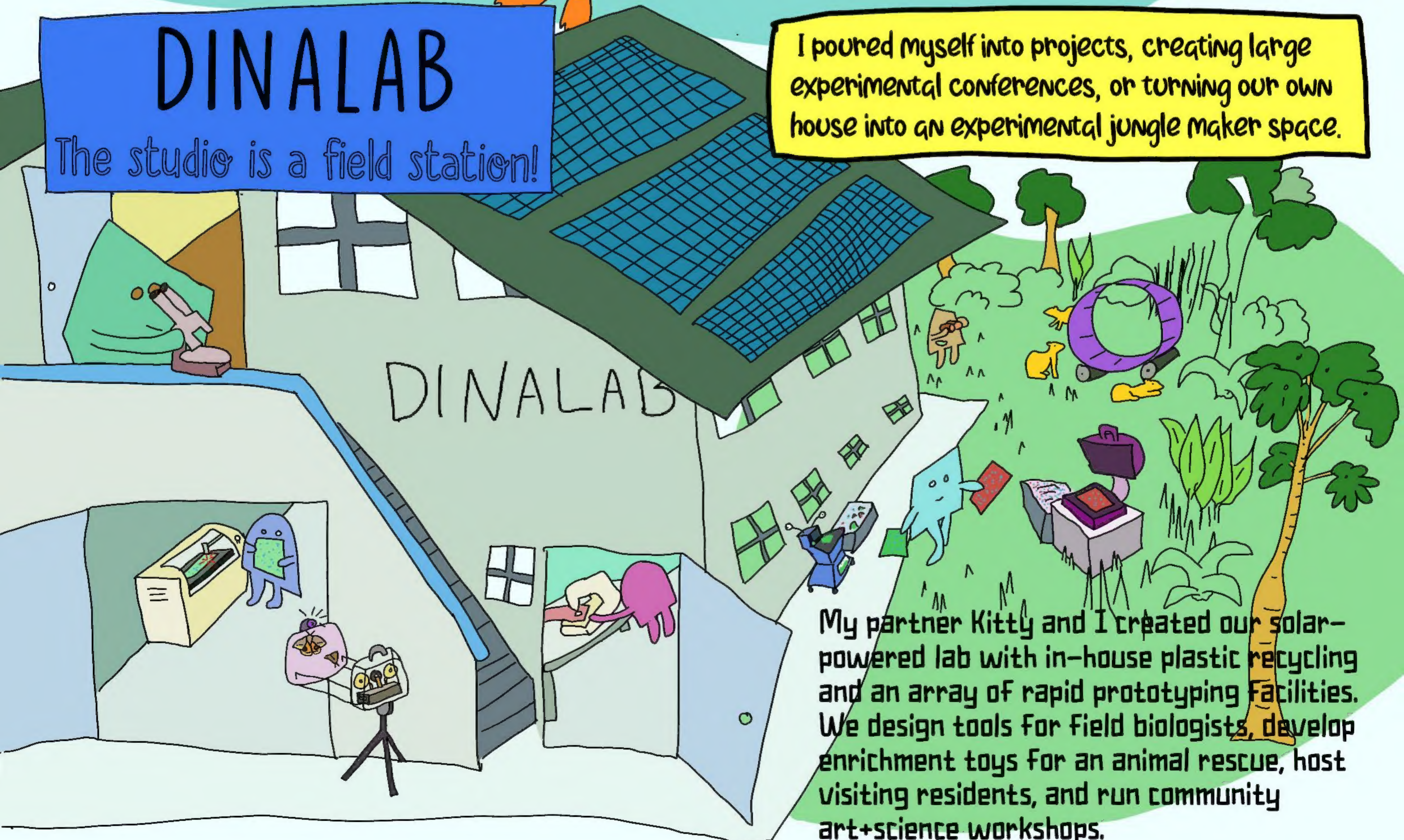
The conference is a field season!



## DINALAB

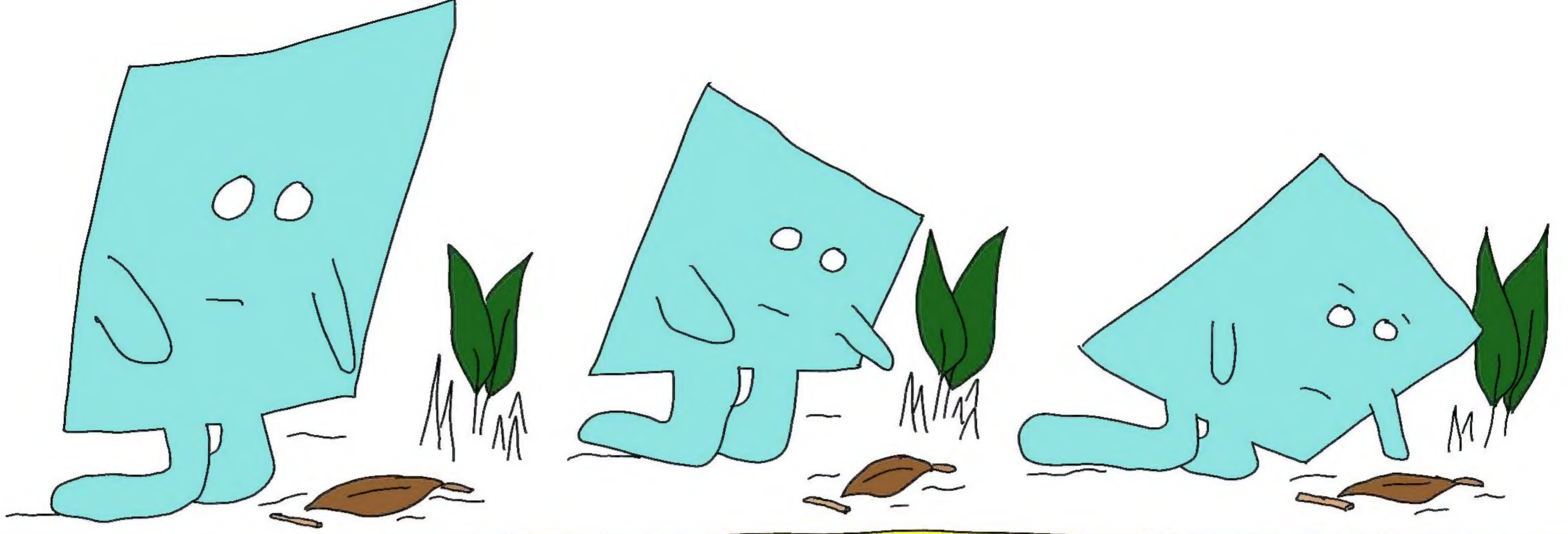
The studio is a field station!

I poured myself into projects, creating large experimental conferences, or turning our own house into an experimental jungle maker space.

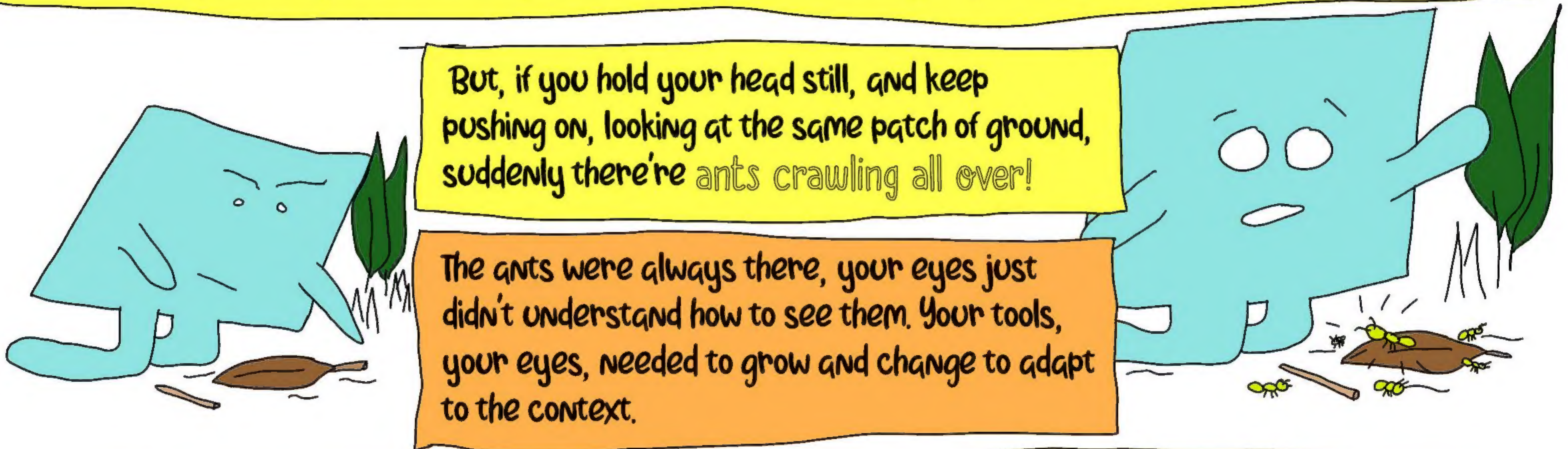


My partner Kitty and I created our solar-powered lab with in-house plastic recycling and an array of rapid prototyping facilities. We design tools for field biologists, develop enrichment toys for an animal rescue, host visiting residents, and run community art+science workshops.





Ant scientists say that the best way to find ants in the rainforest is to just look at a patch of ground. At first, you won't see any ants anywhere on the ground, and if you keep looking... you still won't see any ants.



But, if you hold your head still, and keep pushing on, looking at the same patch of ground, suddenly there're ants crawling all over!

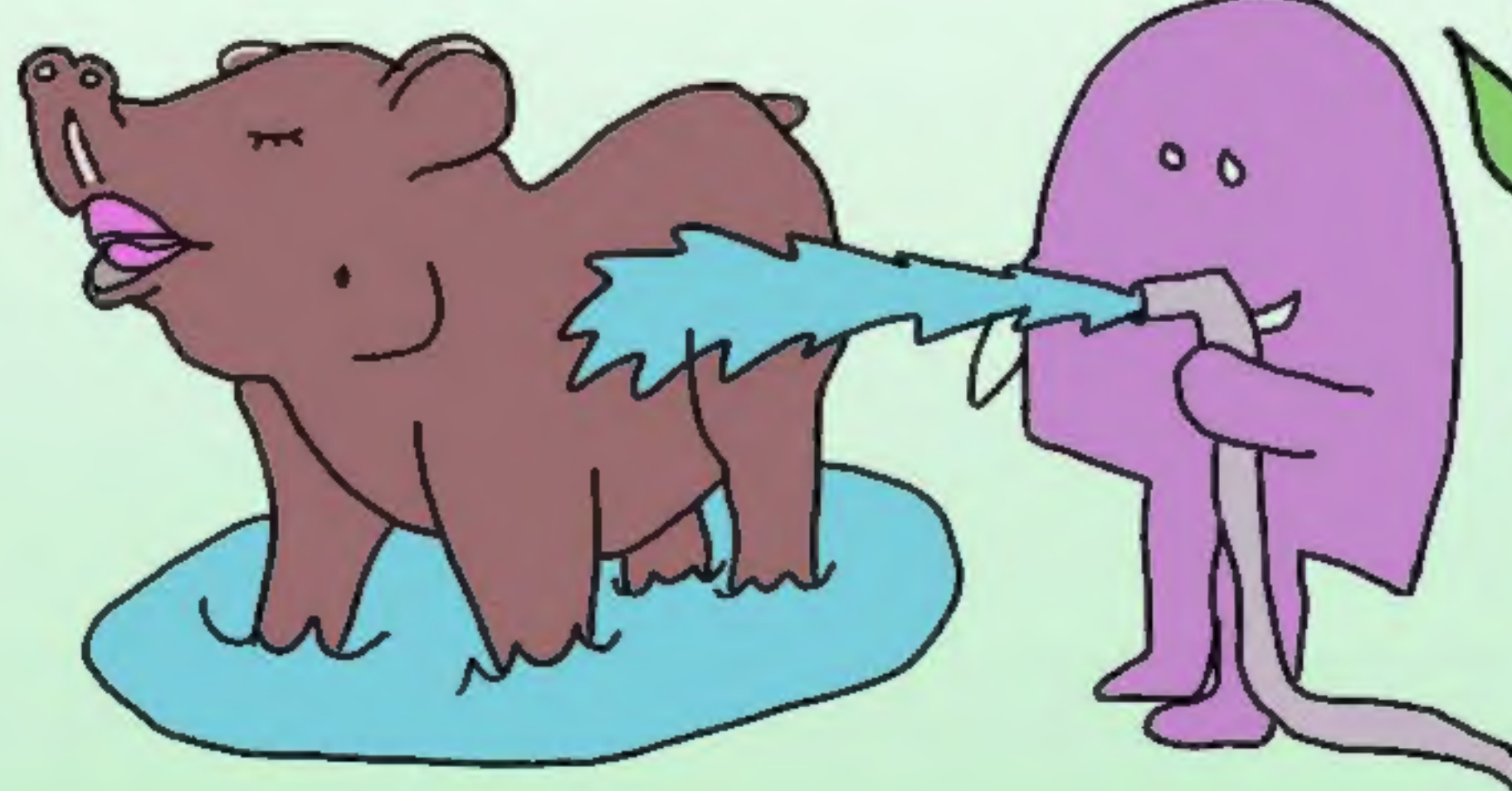
The ants were always there, your eyes just didn't understand how to see them. Your tools, your eyes, needed to grow and change to adapt to the context.

Originally, I thought this "digital naturalism" research was going to be about adding more robots to the jungle. I spent a lot of time depressed, thinking about how much time, money, and life we invested, yet we weren't producing anything like the vision of a bunch of cyborg naturalists traipsing through a digitally connected forest.

It felt like we never had time to make the cyber punk digital entanglements we dreamed of because life was becoming an endless stream of urgent tasks to take care of first.



Fighting the mine

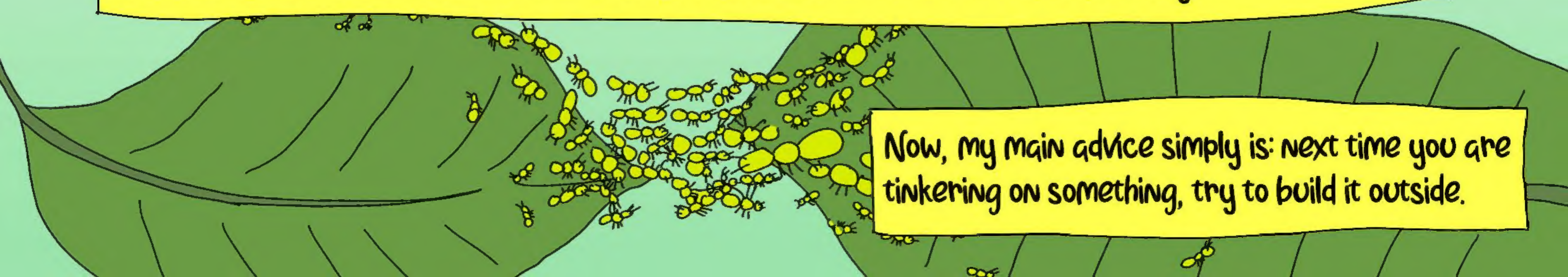


Helping the tapir



Fixing jungle bridges

But now my perspective is starting to change, and I'm beginning to notice more important things. Our tools, our bodies, our minds, they all need time to sit in a context. They need to spawn trails, grow roots, and develop connections in order to extend ourselves into the world in a helpful way.



Now, my main advice simply is: next time you are tinkering on something, try to build it outside.